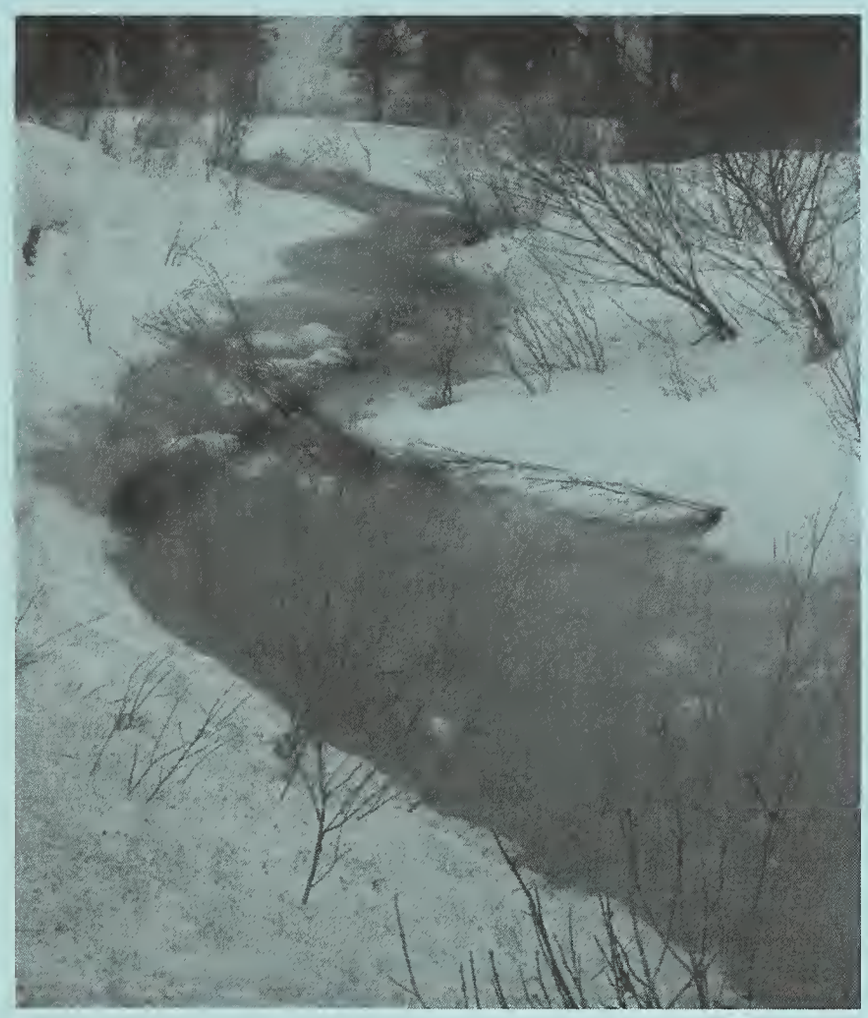
NRCS

United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report April 1, 2012



Rain and snowmelt fill Pine Creek near Swan Valley in eastern Idaho (3/16/12)

Snowmelt started a two weeks earlier than normal this March at some SNOTEL sites. A series of relatively warm storms dominated last month's weather producing new March precipitation records at a 25 SNOTEL sites. Rain produced snowmelt at mid-elevation stations across the state. Pine Creek Pass SNOTEL (6,720 feet elevation) experienced six days (March 12-18) without temperatures dipping below freezing. During that period the site had 0.6" of rain and 1.0" of snowmelt producing 1.6" of total runoff. Other SNOTEL stations in central Idaho had 1.5" to 3.5" of rain pass through the snowpack during this period. At higher elevations, where cooler temperatures prevailed, there was significant snowfall. The biggest snowpack gains were in the Wood and Lost basins where snowpacks jumped 16-34% in March. After a slow start this winter, it's good news that most of Idaho now has an average April 1 snowpack.

Basin Outlook Reports
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How forecasts are made

Most of the annual streamflow in the western United Statcs originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when the snow melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation modcls to produce runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstrcam influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledgc of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forccast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expccted range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertainty is in the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT
APRIL 1, 2012

SUMMARY

March madness! Storm after storm moved through the Pacific Northwest during March. Periodic heavy rain and snowfall caused avalanches, mud slides, small stream and field flooding, and dangerous travel conditions at times. The highest March monthly precipitation totals in the 30-year SNOTEL record occurred at more than 25 SNOTEL sites from the Big Lost basin to the northern Panhandle region. Central and northern Idaho were the main beneficiaries, and are pretty much guaranteed a plentiful water supply this summer. Panhandle areas, however, got too much of a good thing and the flood potential has definitely increased as snowpaks grew to 120% of normal in some basins. Another downside of the madness is that parts of southern and especially southeast Idaho were on the dry side of the major storm tracks. The seasonal water outlook in those already dry areas worsened considerably since last month as warm weather melted much of the low and mid elevation snowpack.

SNOWPACK

Diverse conditions would be an understatement to describe the present snowpack situation in Idaho. The changes in snowpack percent of normal since March 1 have one of the widest ranges we have ever seen in a one month span. Snowpack decreased 19 to 22 percent in the Bear, Blackfoot, Bruneau, Owyhee and Portneuf basins for example, while it increased 34 percent in the Big Lost and between 20 and 30 percent in the Panhandle, Salmon, Payette, and Big and Little Wood basins. Other lesser but significant decreases occurred throughout southern Idaho and the upper Snake above Heise. Major increases happened in the Clearwater, Spokane and Boise basins while the Henrys Fork increased about 5 percent. April 1 is normally considered the peak of seasonal snowpack and the best indicator of total summer streamflow volumes. So as it stands now after all the March madness; the Panhandle snowpack is about 120% of normal, the Clearwater south through Salmon, Payette, Boise, Big Wood, Henrys Fork and Snake above Jackson Lake runs from about 110 – 95%, while most of the rest of eastern and central Idaho is in the 80 - 90% range. That leaves southern Idaho as the area of concern. The Bear River, which was extremely high last year is now just 61% of normal snowpack while the Owyhee, Bruneau, Salmon Falls and Portneuf are dismal in the range of 40 – 60% of normal.

PRECIPITATION

Idaho received well above normal precipitation during March in most areas north of the Snake River Plain. Many SNOTEL sites recorded two to three times their normal monthly amounts. New records for the 30-year SNOTEL history were set at nearly 25 sites, including the 22 inches received at Bear Mountain (previous record 19 inches) in the Cabinet range on the Idaho – Montana border! Basin totals ranged from 270% of normal in Big Lost - Little Wood and 250% in the Northern Panhandle to the lowest in the state, Bear River at just 57%. Most other areas north of the Snake were in the 130% to 200% range. Areas receiving 70 – 90% last month were in the Raft River and Snake basin above American Falls (not counting Henrys Fork), while the southern basins of Owyhee, Salmon Falls, Bruneau and Oakley were near normal in the 90 – 116% zone. Although the generally warm weather in March brought more rain than snow in the mid and lower elevations causing localized minor flooding, the high elevations absorbed the rain and also got plenty of snow as well. Snowpack percentages increased significantly as a result in many areas. All the rain has pretty well primed the soil profile and many streams begin rising. This means any additional rain storms will quickly produce runoff. People living in flood

prone areas should keep this in mind and keep up with information and forecasts provided by the National Weather Service as the storms roll in this spring.

RESERVOIRS

Until now the abundant carry over water stored in Idaho reservoirs was considered an advantage as a buffer in case snowpacks did not reach normal levels and produce adequate summer runoff. Now it has become a liability in some areas due to the tremendous precipitation and resulting streamflow during March. Reservoir operators are increasing the outflows to compensate for the above normal streamflow in March and because the summer April – July forecasts have increased quite a bit since last month. Still, nearly all reservoirs we report on are storing above average amounts. Magic, Little Wood and Mackay combined are 160% of average, (96% full) highest in the state, with little room to maneuver should high runoff come suddenly due to hot weather or rain. That area could have potential problems even though the forecasts are near normal. The upper Snake system currently has 103% of average storage on the Henrys Fork side but 125% of normal for Jackson and Palisades combined. The overall water supply there should be adequate even if drier conditions set in. In southern Idaho, Oakley, Salmon Falls and Owyhee reservoirs hold 116, 141 and 105 percent of normal, respectively, and should easily accommodate the lower than normal runoff predicted this summer. The Boise and Payette systems are 127% of normal and releasing very high flows to maintain the proper amount of space. Stream forecasts there increased 20 to 25 percentage points since last month, requiring a rather sudden change in their operation. In the Clearwater and Panhandle region reservoirs are right at normal levels for April 1 and the forecasts are now above average and may present operational challenges if weather patterns become usually wet or warm.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

QUIZ. The water supply outlook change since last month is a) greatly improved, b) sharply decreased, c) about the same? Try ALL of the above! Record March precipitation throughout central and north Idaho increased the snowpack considerably resulting in big increases in the projected streamflow forecasts. April – July forecasts increased 15 to 30 percentage points in all areas north of the Boise basin and now range from just above 100% of average in the Weiser, Payette, Boise and Salmon basins to between 110 and 125% of normal from the Clearwater north into Canada. Major increases of 30 to 45 forecast percentage points also happened in the Big and Little Wood and Big Lost, areas that were really lagging. Snowpacks didn't quite reach normal, but the current streamflow forecasts are 90 – 100% of average, great news for water users in those areas. The large increase, however, brings renewed potential for extreme high flows in the Panhandle where the snowpack is above 120% of normal. It all depends on how hot the weather gets once the active snowmelt begins later this month. Most streams are already running higher than normal and will quickly respond to even modest amounts of rain.

The opposite extreme occurred in the Bear River area and the southern basins of the mainstem Snake such as Heise, Greys, Salt and Portneuf where the forecasts decreased 10 to 20 percentages points since March 1. Those areas were struggling to remain optimistic for a better water supply outlook but the storm tracks did not favor this region. April – July forecasts now range downward from a high of just 80% for the Snake at Heise to around 50% of normal in the Portneuf and the Bear. Reservoir storage is very good and should mitigate the effects if

the lower forecasts hold true. A prolonged wet spring like last year would definitely improve things. The overall surface water supply including streamflow and reservoir should be adequate for most uses.

Areas where the projected summer streamflow volumes remain similar to last month include Henrys Fork and Snake above Jackson Lake; Owyhee, Bruneau, Salmon Falls and Oakley. Forecasts, however, were low to begin with in those southern basins and stay at about 40, 60, 50 and 75% of average, respectively. Reservoir storage is quite good in Oakley, Salmon Falls and Owyhee so the overall water supply should be good enough to meet the needs of users in those areas. Henrys Fork near Rexburg and the Snake near Moran above Jackson are still forecast at 90 and 101% of average, respectively.

Note: The volumes referenced in these narratives are the 50% Chance of Exceeding Forecast, unless otherwise noted. Users may wish to use a different forecast to reduce their risk of having too much or too little water. Forecasts published in this report are produced between the USDA NRCS and NOAA NWS; the joint west-wide Water Supply Outlook for the Western US is available at: http://www.wcc.nrcs.usda.gov/wsf/westwide.html.

RECREATION

March saw significant increases in snow water in the Salmon, Weiser, Payette and Boise basins. These increases may improve boating opportunities and increase fishing availability later in the year. Basins in North Idaho remained at or above normal. Similarly, the April to July forecast for water volume increased, depending on the level of reservoir control. Increases were seen across the state except for in the south part of the state. The April through July volume for the Snake River went down, while the Big Wood at Hailey volume forecast increased to about average. Peak flows could come later than normal and may be higher than similar years where there is a transition out of La Nina such as 2001. On the Selway and the Lochsa Rivers, peak flow could be similar to 2009, or 10 to 30% above normal. Currently several peak flows are forecast about average such as the Middle Fork of the Salmon, and the Henrys Fork. The main exception is the Owyhee, Bruneau and Bear River drainage.

Low elevation snowpack, below about 7,500, has densities greater than 40% in most of the state. Back country skiers are reporting an isothermal snow pack, and wet conditions. Isothermal means the same temperature, typically 32 F, throughout the snowpack. Isothermal, low elevation snow could melt very quickly, and this could provide a rapid peak flow on rivers such as the Big Wood, the Payette, and the Weiser. Recession of this first peak should be very rapid. Similarly, the lower elevations may not provide good skiing or snowmobiling if the weather stays warm. Most April and May quality skiing and snowmobile riding will be at higher elevations. As the higher elevation snow melts, a second peak flow could appear, and the upper elevation snowmelt recession may be longer, due to wet soil conditions.

The Owyhee and Bruneau basin's snowpacks are currently below 50% of normal, so good floating conditions on the Bruneau, Jarbidge, and Owyhee may be brief. Mud Flat SNOTEL (Owyhee basin, 5,730 feet elevation) melted out in mid-March instead of the usual mid-April.

WESTERN SNOW CONFERENCE MAY 2012

The 80th annual Western Snow Conference is in Anchorage, Alaska from May 21-24. The theme for this year's conference is "Bright lights and winter nights – working with extremes". There will be a Short Course on Monday covering "Remote Data Collection Communication Options". Additional conference information is available at: http://www.westernsnowconference.org/.

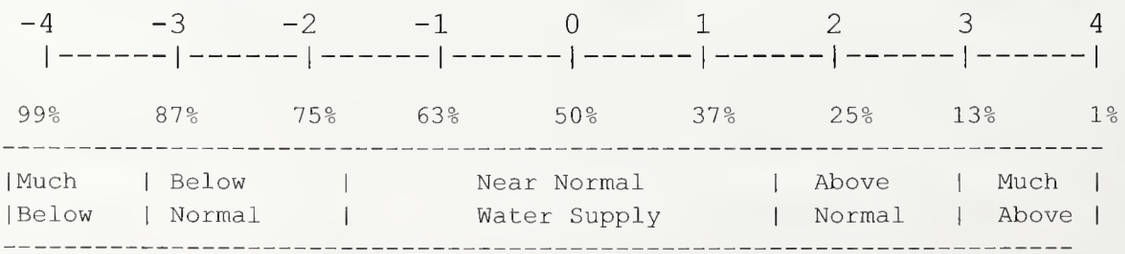
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) April 1, 2012

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.0 (abundant supply) to -4.0 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences. The SWSI analysis period is from 1971 to present.

SWSI values provide a more comprehensive outlook of water availability by combining streamflow forecasts and reservoir storage where appropriate. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been determined for some basins to indicate the potential for agricultural irrigation water shortages.

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortages Occur When SWSI is Less Than*
Northern Panhandle	**2.7**	**2002**	**NA**
Spokane	**2.3**	**2006**	**NA**
Clearwater	**2.5**	**2009**	**NA**
Salmon	**0.4**	**2010 / 1998**	**NA**
Weiser	**0.7**	**2010**	**NA**
Payette	**0.9**	**2008**	**NA**
Boise	**1.7**	**1998 / 1995**	**-1.8 to -2.1**
Big Wood	**1.4**	**2011**	**0.6 to 0.0**
Little Wood	**1.1**	**2005**	**-1.6 to -2.6**
Big Lost	**0.9**	**2011**	**0.5 to -0.2**
Little Lost	**0.9**	**2010**	**1.5 to 0.7**
Teton	**-0.9**	**2005**	**-3.7 to -3.9**
Henrys Fork	**0.0**	**2010**	**-3.4 to -3.6**
Snake (Heise)	**0.6**	**2010**	**-1.3 to -1.6**
Oakley	**1.7**	**2011**	**0.0 to -0.5**
Salmon Falls	**1.4**	**1996**	**-0.8 to -1.3**
Bruneau	**-0.9**	**2002**	**NA**
Owyhee	**0.1**	**2005**	**-3.0 to -3.5**
Bear River	**1.7**	**2011**	**-3.0 to -3.4**

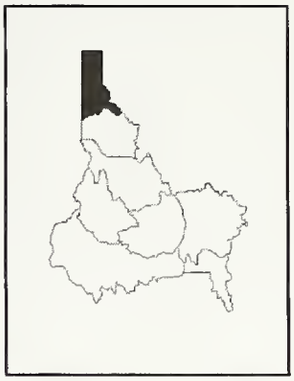
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

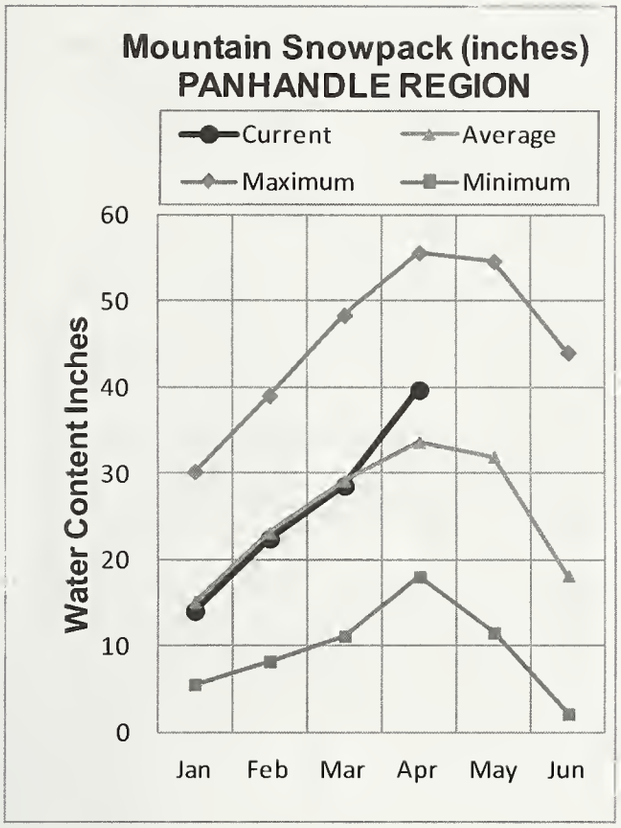


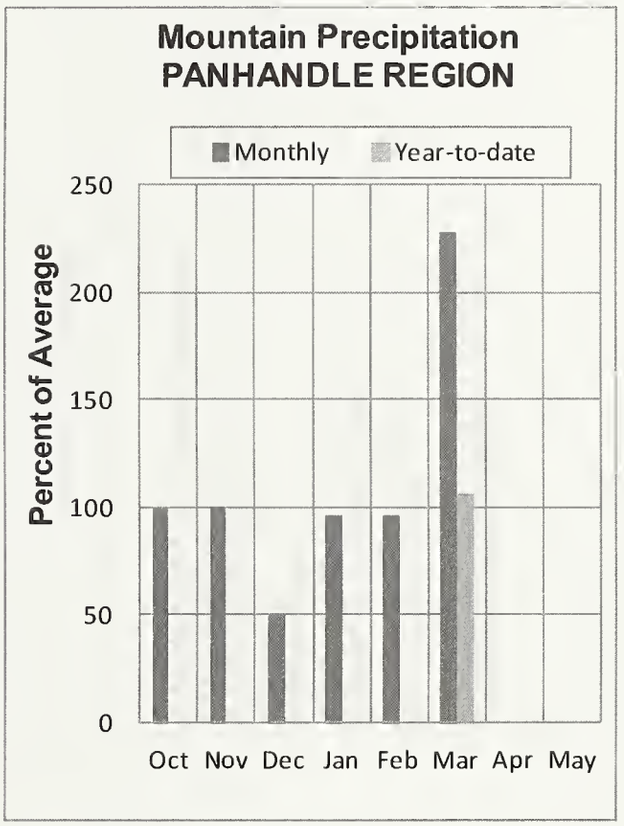
NA = Not Applicable, Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION

APRIL 1, 2012







WATER SUPPLY OUTLOOK

Record setting precipitation in March provided the Panhandle with over twice the normal amount of moisture for the month. Thirteen SNOTEL sites broke March precipitation records. The biggest winners were the sites just north of Lake Pend Oreille. Bear Mountain SNOTEL received 22 inches of precipitation during the month of March, breaking its previous record for the month by 3 inches. Schweitzer Basin SNOTEL had 18 inches of precipitation, breaking its previous monthly record by 11 inches. Water year precipitation since October 1 is 104% of normal in the Spokane Basin and to 110% for the Northern Panhandle. Snowpacks increased from near average for the region last month to 114% of normal in the Spokane Basin and 132% in the Northern Panhandle. Streamflow forecasts range from 102% of normal for Priest River near Priest to 129% for Smith Creek near Porthill. Forecasts predict slightly cooler than normal weather now through April for the Panhandle. Hopefully cool temperatures will allow the snow to melt gradually without flooding. With snowpacks 120-130% of their normal peak amount at many SNOTEL sites, flooding concerns are not unfounded.

PANHANDLE REGION
Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Kootenai R at Leonia (1,2)	APR-JUL	7280	8010	8350	119	8690	9420	7040
	APR-SEP	8490	9240	9580	118	9920	10700	8120
Moyie R at Eastport	APR-JUL	415	465	500	124	535	585	405
	APR-SEP	425	480	515	123	550	605	420
Smith Ck nr Porthill	APR-JUL	130	147	159	129	171	188	123
	APR-SEP	134	154	167	130	180	200	129
Boundary Ck nr Porthill	APR-JUL	133	146	155	126	164	177	123
	APR-SEP	139	153	162	126	171	185	129
Clark Fork at Whitehorse Rpds (1,2)	APR-JUL	10200	11700	12300	109	12900	14400	11300
	APR-SEP	11200	12800	13500	108	14200	15800	12500
Pend Oreille Lake Inflow (2)	APR-JUL	11700	12800	13500	106	14200	15200	12700
	APR-SEP	12900	14000	14800	107	15700	16800	13900
Priest R nr Priest River (1,2)	APR-JUL	705	780	830	102	880	955	815
	APR-SEP	745	830	885	102	940	1030	870
NF Coeur d'Alene R at Enaville	APR-JUL	715	825	900	122	975	1090	740
	APR-SEP	750	865	940	121	1020	1130	780
St. Joe R at Calder	APR-JUL	1060	1170	1250	110	1330	1440	1140
	APR-SEP	1130	1240	1320	110	1400	1510	1200
Spokane R nr Post Falls (2)	APR-JUL	2480	2810	3040	119	3270	3600	2550
	APR-SEP	2570	2920	3150	119	3380	3730	2650
Spokane R at Long Lake (2)	APR-JUL	2780	3140	3390	119	3640	4000	2850
	APR-SEP	3010	3390	3650	119	3910	4290	3070

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Pend Oreille	1561.3	711.4	818.1	763.6
Coeur d'Alene	238.5	302.7	178.1	169.5
Priest Lake	119.3	69.1	54.1	65.5

PANHANDLE REGION
Watershed Snowpack Analysis - April 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	28	103	127
Moyie River	6	105	125
Priest River	4	117	133
Pend Oreille River	91	90	108
Rathdrum Creek	3	110	170
Coeur d'Alene River	10	94	113
St. Joe River	6	93	101
Spokane River	17	96	114
Palouse River	2	112	119

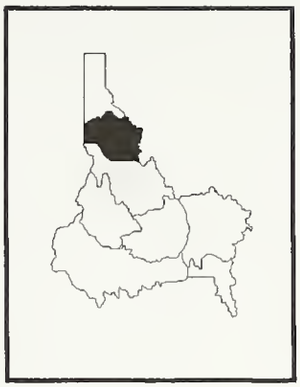
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

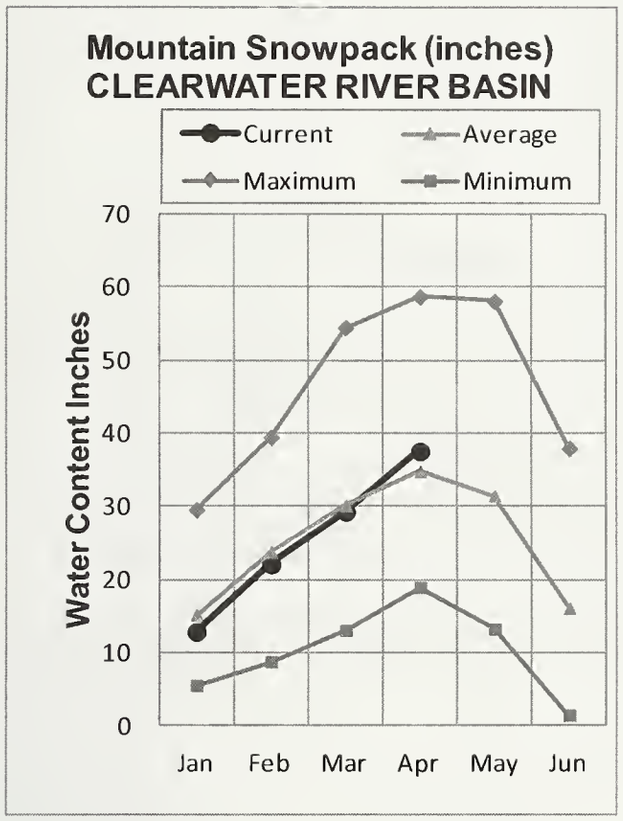
The average is computed for the 1971-2000 base period.

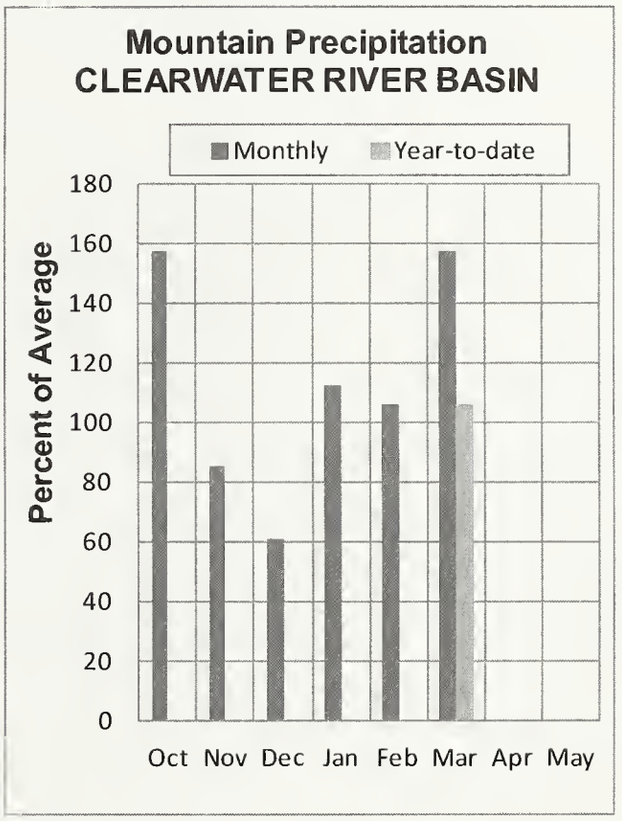
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN

APRIL 1, 2012







WATER SUPPLY OUTLOOK

March brought over one and a half times the normal monthly precipitation to the Clearwater basin. The favorable storm track boosted the snowpack to 108% of normal, an increase of 11% since last month. Water year precipitation since October 1 is 106% of normal. Despite relatively warm temperatures in March the only SNOTEL sites to experience snowmelt were those below 3,200 feet elevation. This snowmelt combined with valley rain was enough to increase streamflow. The various forks of the Clearwater River ran at 110-120% of average in March. Dworshak Reservoir is currently storing more water than last year at this time. The storage volume in Dworshak is 2.3 million acre-feet, which is 103% of average, 66% of capacity. Dworshak Reservoir inflow for the April to July period is forecast at 108% of normal. Other rivers are forecast between 109 to 122% of average for the same period. La Nina conditions in the Pacific Ocean have weakened in the past few months. Long range climate forecasts for the April-June period are not pointing clearly in one direction for the Clearwater, in other words there are equal chances for either cool, normal or warm temperatures. In contrast, the Panhandle's forecast is for cooler than normal weather. Perhaps those cool temps will shift south into the Clearwater too. Pay attention to short-term weather forecasts for clues as to when snowmelt will kick in and peak streamflows will occur. The above normal snowpack promises a good water supply and higher than normal base flows through much of the summer.

CLEARWATER RIVER BASIN
Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Selway R nr Lowell	APR-JUL	1990	2140	2250	109	2360	2510	2060
	APR-SEP	2080	2240	2360	109	2480	2640	2170
Lochsa R nr Lowell	APR-JUL	1450	1580	1660	109	1740	1870	1530
	APR-SEP	1510	1650	1740	108	1830	1970	1610
Clearwater R at Orofino (1)	APR-JUL	5570	5620	5650	122	5680	5730	4650
	APR-SEP	5870	5920	5950	121	5980	6030	4900
Dworshak Res Inflow	APR-JUL	2170	2640	2860	108	3080	3550	2640
	APR-SEP	2260	2780	3010	108	3240	3760	2800
Clearwater R at Spalding (1,2)	APR-JUL	8720	8770	8800	118	8830	8880	7430
	APR-SEP	9120	9170	9200	117	9230	9280	7850

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Dworshak	3468.0	2305.0	1619.2	2244.1

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - April 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	95	107
Lochsa River	3	97	109
Selway River	5	101	105
Clearwater Basin Total	18	97	108

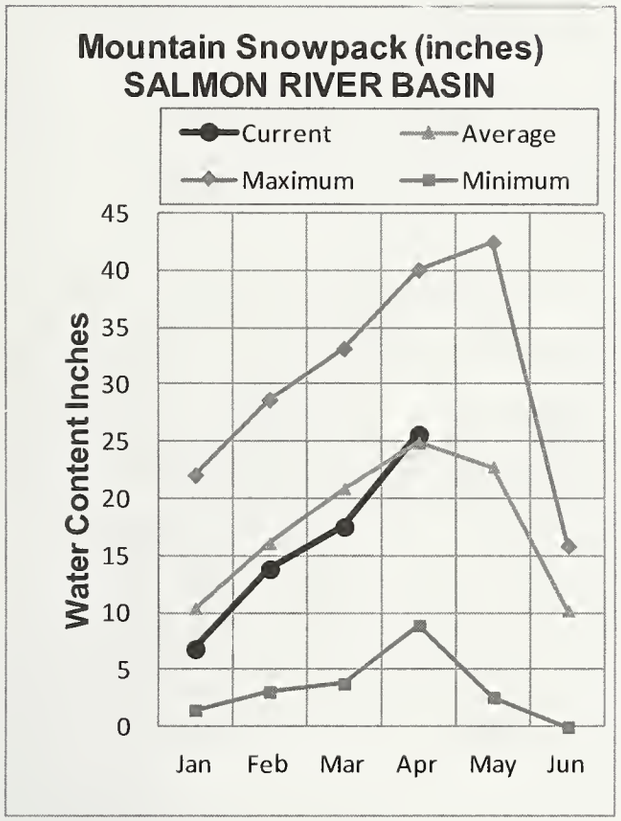
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

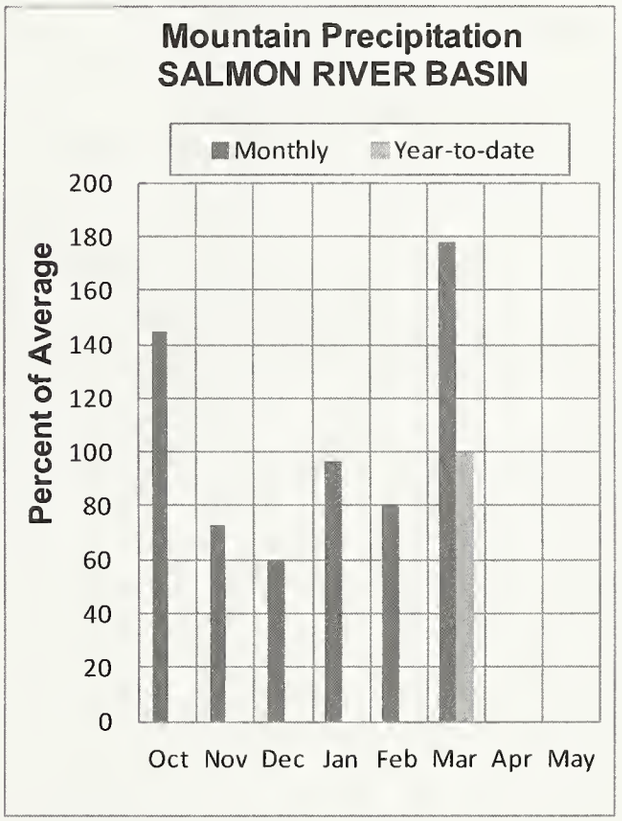
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN

APRIL 1, 2012





WATER SUPPLY OUTLOOK

The mountainous interior of Idaho benefitted from above normal precipitation in March to improve the Salmon River's snowpack to average levels as wintertime snow accumulation approaches its end. Four of eleven SNOTEL sites in the Salmon Basin broke or nearly tied previous monthly precipitation records for March. Mill Creek Summit, near Challis, received almost 7 inches of precipitation for the month, breaking its previous record of 5.7 inches set in 2009. Monthly precipitation for the Salmon basin was 178% of average, more than twice what was received in February. Water year to date precipitation since the start of October is average, having jumped 17% since last month. Streamflow forecasts increased and now range from 94-109% of normal. The only forecast point that falls outside the near average range is the Lemhi River forecast at 86%. It's still much too early to predict the exact shape of the spring hydrograph. Long range forecasts are calling for below average precipitation between April and June. If dry conditions prevail, expect the Middle Fork Salmon River to peak when Banner Summit SNOTEL is half melted. Banner Summit SNOTEL is currently measuring 29 inches of snow water and is still accumulating snow. Keep watching this site's snow water to determine this year's half-melt value, which will provide a clue as to when the river gets past its snowmelt driven peak flow.

SALMON RIVER BASIN
Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Salmon R at Salmon (1)	APR-JUL	660	820	890	104	960	1120	855
	APR-SEP	760	945	1030	103	1110	1300	1000
Lemhi R nr Lemhi	APR-JUL	52	65	74	86	84	99	86
	APR-SEP	65	80	90	86	101	118	105
MF Salmon R at MF Lodge	APR-JUL	670	780	855	109	930	1040	785
	APR-SEP	735	860	945	108	1030	1160	875
SF Salmon R nr Krassel RS	APR-JUL	220	255	275	95	295	330	290
	APR-SEP	250	275	295	95	315	340	310
Johnson Ck at Yellow Pine	APR-JUL	149	175	193	94	210	235	205
	APR-SEP	158	183	200	93	215	240	215
Salmon R at White Bird (1)	APR-JUL	4470	5420	5850	100	6280	7230	5850
	APR-SEP	4930	6000	6480	100	6960	8030	6480

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - April 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	9	106	108
Lemhi River	9	83	92
Middle Fork Salmon River	3	102	102
South Fork Salmon River	3	99	104
Little Salmon River	4	86	99
Salmon Basin Total	29	93	100

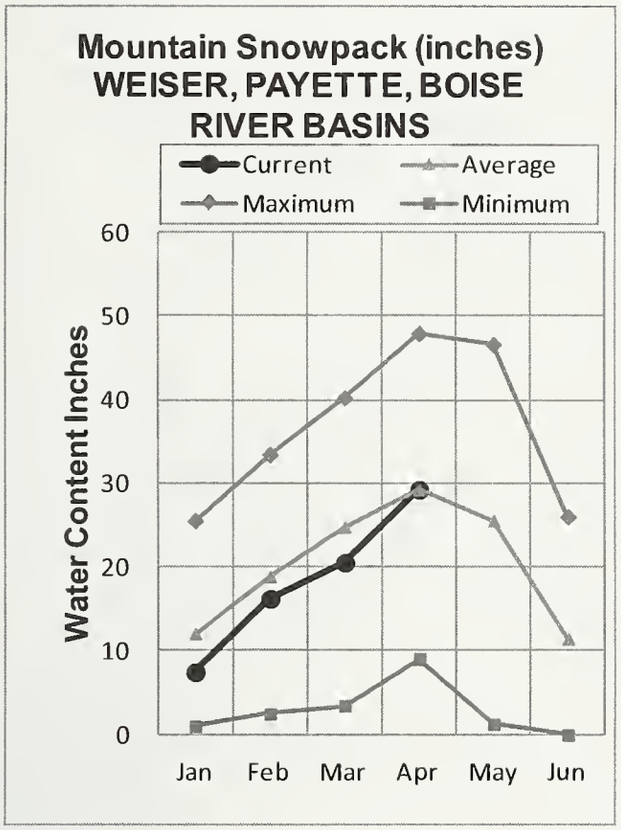
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

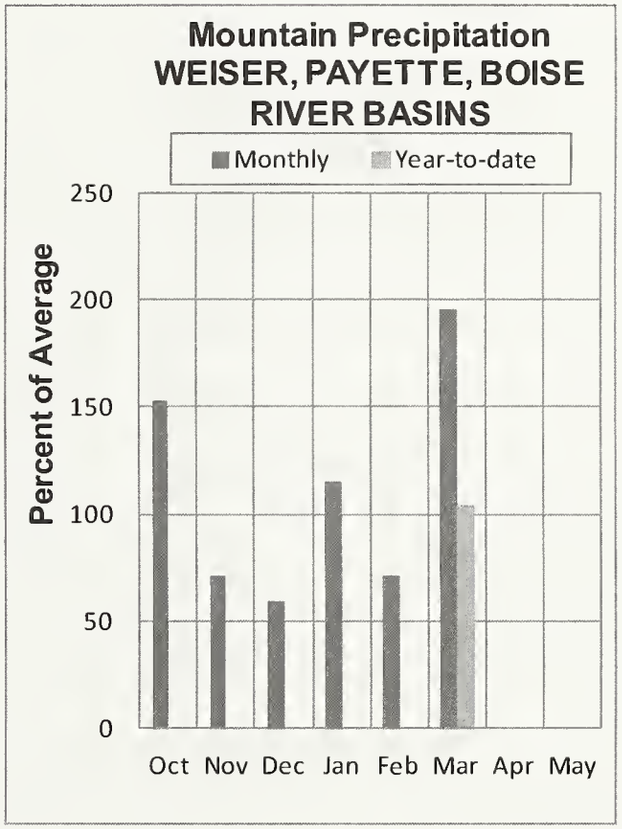
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS

APRIL 1, 2012





WATER SUPPLY OUTLOOK

March's storms packed the biggest punch of the season for Idaho's west central mountains. Unlike the dry start/stormy finish pattern that repeated itself each month from December through February, March brought a more consistently stormy pattern. Warmer than normal temperatures produced exceptionally wet storms and resulted in monthly precipitation records at nine of eighteen SNOTEL sites across the Weiser, Payette and Boise basins. Squaw Flat SNOTEL, north of Tamarack Resort, recorded 14.5 inches of precipitation last month shattering its March 1995 record of 10.4 inches. Three other sites, Big Creek Summit, West Branch, and Atlanta Summit, broke records set just one year ago in March 2011. Water year precipitation since October is 104% of average across the three basins. Relatively warm temperatures meant rain at times in the mountains. Rain below 7,000 feet fueled snowmelt and swelled the Weiser River to near flood stage on March 16 and 31. Snowpacks below 7,000 feet are now primed and ready to melt when temperatures stay above freezing. The Payette Basin, with its higher elevation mountains, had the biggest increase in snowpack jumping from 77% on March 1 to 98% on April 1. Snowpacks had a net increase of about 10% in the Weiser and Boise basins, despite on-again, off-again snowmelt at some sites. The Weiser snowpack is currently 88% of normal, while the Boise's is 93%. Streamflow forecasts are near average or a little better for all forecast points in these basins. The Boise and Payette reservoir systems are storing ~125% of their average April 1 amounts and managers are adjusting reservoir levels to account for the additional precipitation. With plenty of water in the reservoirs and average snow in the mountains, there should be plenty of water to meet demands this summer.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Weiser R nr Weiser (1)	APR-JUL	220	330	390	100	450	605	390
	APR-SEP	245	360	420	100	485	645	420
SF Payette R at Lowman	APR-JUL	385	420	450	102	480	525	440
	APR-SEP	430	475	505	102	540	590	495
Deadwood Resv Inflow (1,2)	APR-JUL	113	132	141	105	150	169	134
	APR-SEP	117	139	149	105	159	181	142
Lake Fork Payette R nr McCall	APR-JUL	69	77	83	98	89	98	85
	APR-SEP	71	80	86	97	92	102	89
NF Payette R at Cascade (1,2)	APR-JUL	390	480	520	100	560	650	520
	APR-SEP	400	495	540	100	585	680	540
NF Payette R nr Banks (2)	APR-JUL	550	625	675	100	725	800	675
	APR-SEP	560	645	700	100	755	840	700
Payette R nr Horseshoe Bend (1,2)	APR-JUL	1390	1600	1690	103	1780	1990	1640
	APR-SEP	1430	1680	1800	102	1920	2170	1760
Boise R nr Twin Springs (1)	APR-JUL	550	640	685	108	730	820	635
	APR-SEP	595	695	740	107	785	885	690
SF Boise R at Anderson Ranch Dam (1,	APR-JUL	455	535	570	106	605	685	540
	APR-SEP	480	565	605	104	645	730	580
Mores Ck nr Arrowrock Dam	APR-JUL	96	118	135	103	153	181	131
	APR-SEP	100	124	141	103	160	189	137
Boise R nr Boise (1,2)	APR-JUN	1170	1290	1340	106	1390	1510	1260
	APR-JUL	1200	1410	1500	106	1590	1800	1410
	APR-SEP	1320	1530	1620	106	1710	1920	1530

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Mann Creek	11.1	9.4	9.7	8.8
Cascade	693.2	552.6	495.4	428.8
Deadwood	161.9	103.4	104.5	91.6
Anderson Ranch	450.2	374.3	342.5	262.8
Arrowrock	272.2	242.1	225.6	204.5
Lucky Peak	293.2	184.8	216.9	162.6
Lake Lowell (Deer Flat)	165.2	117.7	119.7	126.9

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	1	62	84
Weiser River	4	69	88
North Fork Payette	8	86	99
South Fork Payette	5	101	102
Payette Basin Total	15	89	98
Middle & North Fork Boise	5	99	96
South Fork Boise River	9	92	96
Mores Creek	6	77	86
Boise Basin Total	17	88	93
Canyon Creek	2	47	68

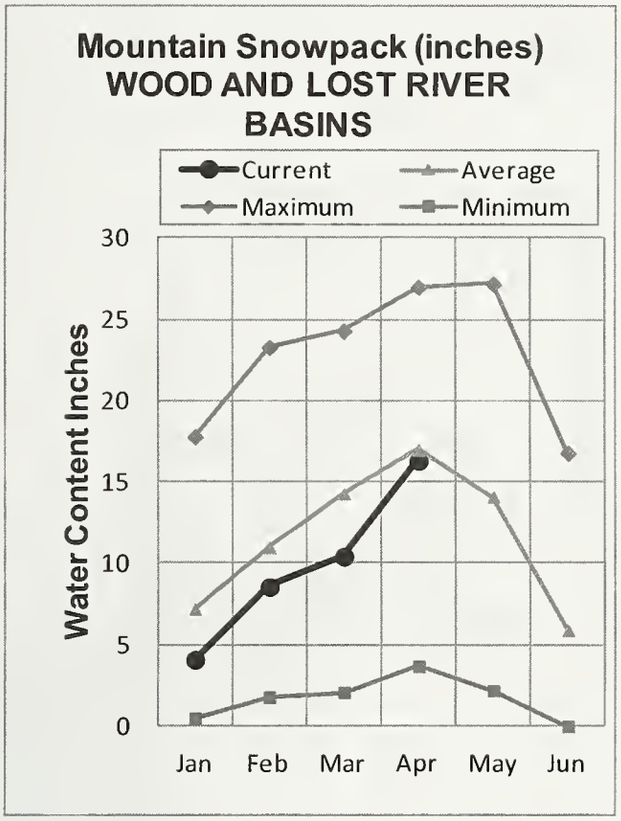
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

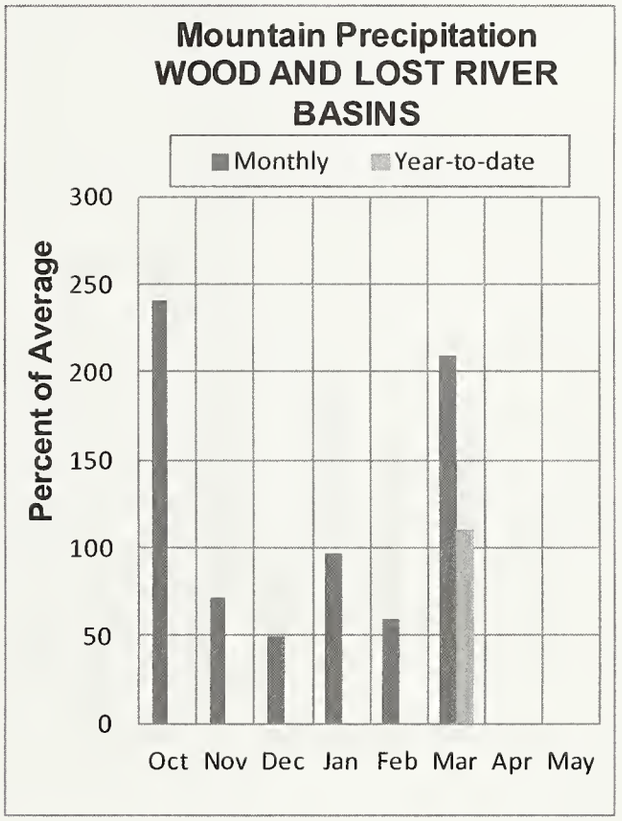
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WOOD and LOST RIVER BASINS

APRIL 1, 2012





WATER SUPPLY OUTLOOK

For the past two years the Wood and Lost basins have experienced miracle March snowfall. March 2011 snowpacks increased 14-26%, this year the increases were even larger at 16-34%. March brought twice normal monthly precipitation across the region. Bear Canyon and Stickney Mill SNOTELs, in the headwaters of the Big Lost River, had three times their normal March precipitation amounts. In other words, these sites experienced almost a whole winter's worth of precipitation in one month. At Bear Canyon 10 inches of precipitation fell in March, a 31 year record. Another record of 6.2 inches was set at Soldier Ranger Station near Fairfield. No other basins in the state were in greater need of this precipitation. Water year to date precipitation is now 110% of average across these mountains. Snowpacks in the Little Wood and Big Lost basins went from 60% of average on March 1 to 80-90% of average on April 1. The Big Wood snowpack is now near average. Reservoirs are almost full storing 131-173% of their average April 1 amounts. Streamflow forecasts range from 70% of average for Camas Creek at Camas to 90-94% for Big Wood River forecast points. The best forecasts are 97-100% of average for Big Lost at Howell Ranch and Little Lost near Howe. Similar to last year, March's big snowpack increase has eased water supply concerns. This month's Surface Water Supply Index (SWSI) indicates that water supplies should be marginally adequate in all basins based on the 50% exceedance forecast. If the spring turns dry, which is likely for central Idaho based on long range climate forecasts, than the Little Lost basin will be the first to experience water shortages based on the SWSI index.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Big Wood R at Hailey (1)	APR-JUL	165	225	240	94	275	335	255
	APR-SEP	185	250	270	93	310	375	290
Big Wood R ab Magic Res	APR-JUL	111	147	175	92	205	260	190
	APR-SEP	111	154	189	92	230	295	205
Camas Ck nr Blaine	APR-JUL	56	75	90	90	106	132	100
	APR-SEP	57	76	91	90	107	133	101
Big Wood R bl Magic Dam (2)	APR-JUL	179	230	265	91	300	350	290
	APR-SEP	190	245	280	92	315	370	305
Little Wood R ab High Five Ck	APR-JUL	50	66	77	99	89	109	78
	APR-SEP	54	71	83	98	96	118	85
Little Wood R near Carey (2)	APR-JUL	62	75	83	95	91	104	87
	APR-SEP	67	80	89	95	98	111	94
Big Lost R at Howell Ranch	APR-JUL	120	148	168	97	190	225	173
	APR-SEP	135	167	190	96	215	255	197
Big Lost R bl Mackay Res	APR-JUL	100	118	131	93	144	162	141
	APR-SEP	120	143	159	92	175	198	172
Little Lost R nr Howe	APR-JUL	22	27	31	100	35	42	31
	APR-SEP	27	34	39	100	44	53	39
Camas Ck at Camas	APR-JUL	5.0	14.5	21	70	27	37	30

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Magic	191.5	184.9	111.4	107.1
Little Wood	30.0	26.4	22.9	19.4
Mackay	44.4	42.8	38.7	32.7

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - April 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	99	97
Camas Creek	5	67	81
Big Wood Basin Total	13	90	93
Fish Creek	3	52	73
Little Wood River	7	66	81
Big Lost River	5	83	89
Little Lost River	4	77	88
Birch-Medicine Lodge Cree	4	66	81
Camas-Beaver Creeks	4	54	59

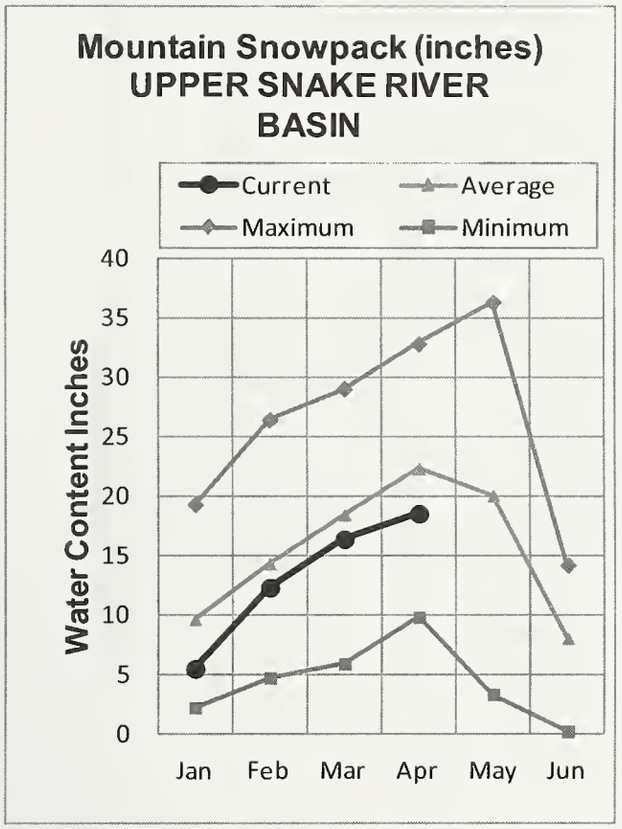
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

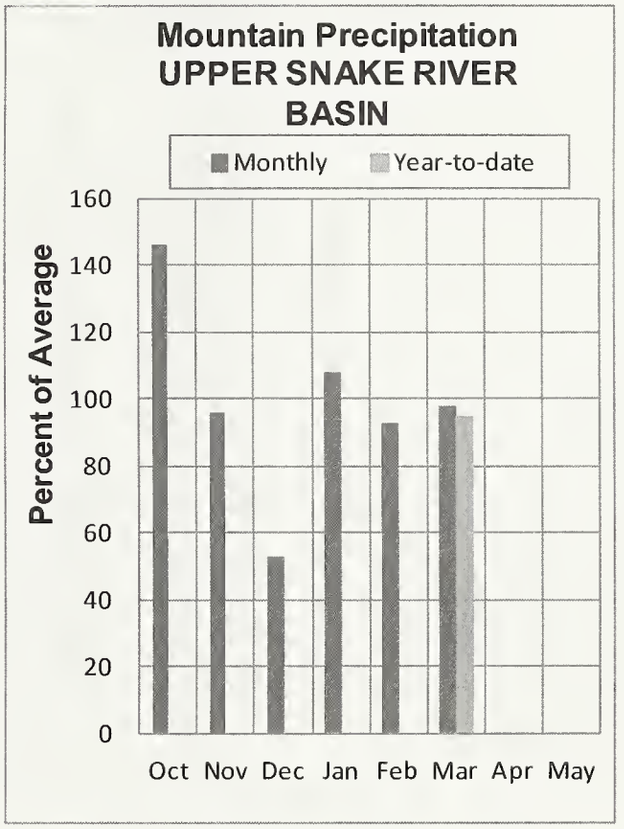
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER SNAKE BASIN

APRIL 1, 2012





WATER SUPPLY OUTLOOK

The barrage of March storms that raged through most of Idaho somewhat missed the Upper Snake Basin. Monthly precipitation was 78% of average for the Snake above Palisades and in the Willow, Blackfoot and Portneuf basins. Only the Henrys Fork and Teton basins had above average monthly precipitation receiving 129% of their normal amount. April 1 snowpack percentages have dropped 8-17% in most areas since March 1. At most sites this is not due to snowmelt but rather average accumulation rates outpacing less than normal snowfall. Only the Henrys Fork saw a slight gain in its snowpack percentages since last month. April 1 snowpacks are 88% of their normal peak amounts in the Henrys Fork and Teton basins and 81% of the normal peak for the Snake above Palisades. Rain falling on snow produced snowmelt at lower elevation SNOTEL sites, especially in the Willow, Blackfoot and Portneuf basins where the April 1 snowpack is now only 54% of its normal seasonal peak amount. Streamflow forecasts are lower in the south and higher in the northern part of the watershed. Forecasts range from 54% of average for the Portneuf and Blackfoot rivers, to 80% of normal for the Greys, Snake at Heise, and Teton rivers. Forecasts are 90-96% of average for the Henrys Fork and Falls rivers. The highest forecasts are 100-107% of normal for the Gros Ventre, Buffalo Fork, Snake at Flagg Ranch and Pacific Creek. Reservoir storage remains above average in the Upper Snake system. As of March 31 the Snake's eight reservoirs are storing 3.9 million acre-feet, 85% of capacity. Despite a below average March and long range forecasts calling for below normal spring precipitation, water users are still in good shape. The Surface Water Supply Index (SWSI) for the Snake River at Heise predicts an adequate water supply using even the lowest (driest) exceedance forecasts.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Henrys Fork nr Ashton (2)	APR-JUL	410	470	515	90	560	630	570
	APR-SEP	565	635	690	90	745	830	765
Falls R nr Ashton (2)	APR-JUL	300	335	365	96	395	440	380
	APR-SEP	350	395	430	96	465	515	450
Teton R nr Driggs	APR-JUL	94	116	132	80	149	177	165
	APR-SEP	118	147	168	80	191	225	210
Teton R nr St. Anthony	APR-JUL	260	305	340	84	375	430	405
	APR-SEP	310	365	405	84	445	510	480
Henrys Fork nr Rexburg (2)	APR-JUL	1170	1310	1400	90	1490	1630	1560
	APR-SEP	1540	1690	1800	90	1910	2060	2010
Snake R at Flagg Ranch	APR-JUL	450	490	515	104	540	580	495
	APR-SEP	495	535	565	104	595	635	545
Snake R nr Moran (1,2)	APR-JUL	680	775	820	101	865	960	815
	APR-SEP	740	855	905	100	955	1070	905
Pacific Ck At Moran	APR-JUL	141	165	182	106	199	225	171
	APR-SEP	148	173	190	107	205	230	178
Buffalo Fork ab Lava nr Moran	APR-JUL	250	280	300	100	320	350	301
	APR-SEP	285	320	345	100	370	405	344
Gros Ventre R at Kelly	APR-JUL	134	173	200	100	225	265	200
	APR-SEP	175	215	245	100	275	315	244
Snake R nr Alpine (1,2)	APR-JUL	1620	1840	1940	82	2040	2260	2370
	APR-SEP	1820	2100	2230	82	2360	2640	2730
Greys R Nr Alpine	APR-JUL	215	245	265	78	285	315	340
	APR-SEP	250	285	310	79	335	370	395
Salt R Nr Etna	APR-JUL	123	184	225	66	265	325	340
	APR-SEP	145	220	275	66	330	405	420
Snake R nr Irwin (1,2)	APR-JUL	2180	2500	2650	80	2800	3120	3330
	APR-SEP	2520	2890	3060	79	3230	3600	3870
Snake R nr Heise (2)	APR-JUL	2820	2830	2830	80	2830	2840	3560
	APR-SEP	2820	3100	3290	79	3480	3760	4160
Willow Ck nr Ririe (2)	APR-JUL	33	50	62	77	74	91	81
Blackfoot R ab Res nr Henry	APR-JUN	18.9	30	39	53	49	66	73
Snake R nr Blackfoot (1,2)	APR-JUL	3540	4060	4300	94	4530	5060	4600
	APR-SEP	4300	4940	5230	93	5520	6160	5620
Portneuf R at Topaz	APR-JUL	31	38	44	54	50	60	81
	APR-SEP	39	48	54	54	61	71	100
Snake R at Neeley (1,2)	APR-JUL	1700	2430	2760	85	3100	3830	3240
	APR-SEP	1830	2620	2980	85	3340	4130	3510

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Henrys Lake	90.4	90.4	90.0	85.5
Island Park	135.2	116.3	100.3	114.6
Grassy Lake	15.2	12.5	13.5	12.3
Jackson Lake	847.0	647.2	659.5	486.6
Palisades	1400.0	1132.7	833.6	941.5
Ririe	80.5	58.6	48.5	41.6
Blackfoot	348.7	295.6	203.0	229.8
American Falls	1672.6	1537.4	1329.5	1443.2

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - April 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	9	77	90
Teton River	8	74	84
Henrys Fork above Rexburg	17	75	87
Snake above Jackson Lake	9	81	93
Pacific Creek	3	86	104
Gros Ventre River	4	68	79
Hoback River	5	62	73
Greys River	4	65	80
Salt River	5	59	72
Snake above Palisades	28	71	84
Willow Creek	7	46	62
Blackfoot River	5	49	62
Portneuf River	6	43	55
Snake abv American Falls	46	65	80

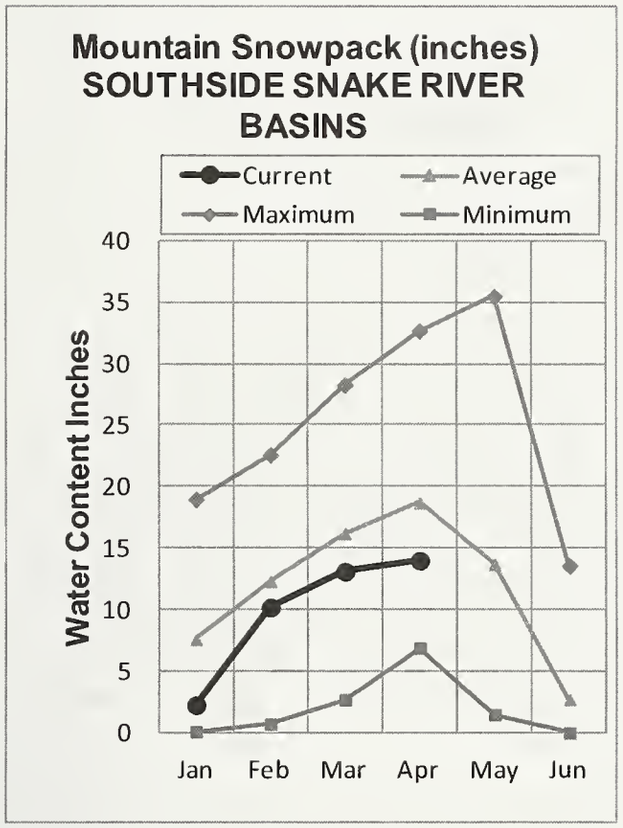
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

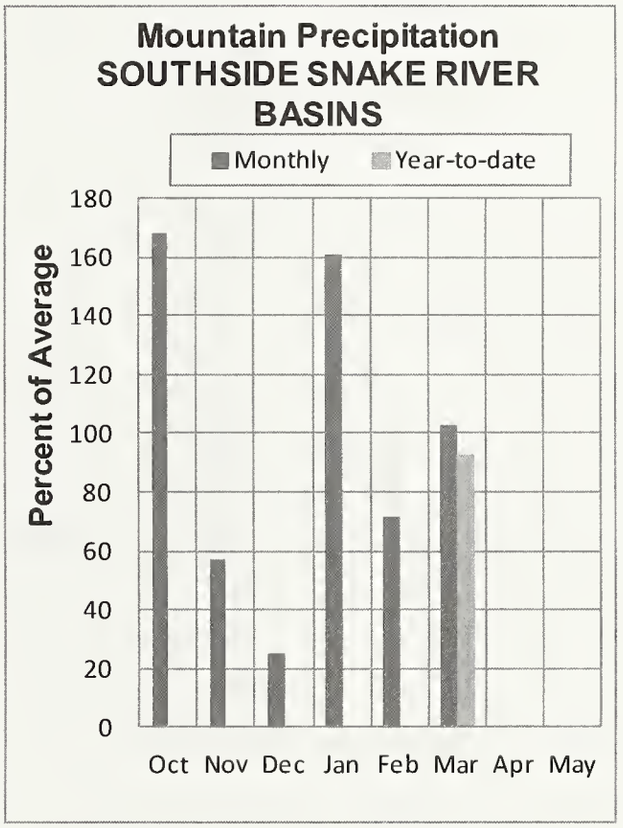
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS

APRIL 1, 2012





WATER SUPPLY OUTLOOK

Although the Southside Snake basins received decent precipitation in March, storms were too warm and rain washed away snow at most SNOTEL sites. Monthly precipitation ranged from 80-98% in the Bruneau, Salmon Falls, Goose and Raft basins to 116% in the Owyhee basin. Unfortunately snow started melting about half a month early at elevations below 8,000 feet. Snowpacks dropped 7-21% between March 1 and April 1. The lowest snowpacks in the state are located in the Owyhee and Bruneau basins, at 37% and 48% of their normal amounts respectively. Salmon Falls is slightly better off with 60%, better still Goose and Raft basins at about 73% of average snow. Water year precipitation is 87% in the Owyhee and Bruneau basins and near average or better in the Salmon Falls, Goose and Raft drainages. Streamflow forecast periods shift from March-July to April-July in this report. Despite the rain and snowmelt, March streamflow was only slightly above average for Salmon Falls Creek and remained below average for the Owyhee at Rome, Bruneau River and Goose Creek. April-July forecasts are 35% of average streamflow for the Owyhee at Rome, 50-60% for the Bruneau River and Salmon Falls Creek, and 76% for Oakley Reservoir inflow. Reservoir storage continues to be the bright spot in the water supply picture with Wildhorse, Owyhee, Salmon Falls and Oakley all storing above average amounts. This stored water will be critical to getting through the summer irrigation season. Long range climate forecasts are predicting below average precipitation through June. The Surface Water Supply Index indicates enough reservoir storage in the Owyhee basin to meet summer demand even without much streamflow. Supplies should also be adequate for Salmon Falls and Oakley water users based on even the driest forecasts thanks to good reservoir storage.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Goose Ck ab Trapper Ck nr Oakley	APR-JUL	6.7	12.2	16.0	70	19.8	25	23
	APR-SEP	7.0	13.0	17.0	71	21	27	24
Trapper Ck nr Oakley	APR-JUL	3.0	4.0	4.6	78	5.2	6.2	5.9
	APR-SEP	4.0	5.0	5.7	78	6.4	7.4	7.3
Oakley Res Inflow	APR-JUL	11.3	17.2	22	76	27	36	29
	APR-SEP	12.4	18.8	24	75	30	39	32
Salmon Falls Ck nr San Jacinto	APR-JUN	22	31	39	52	48	62	75
	APR-JUL	22	33	41	51	50	66	80
	APR-SEP	24	35	44	52	54	70	84
Bruneau R nr Hot Springs	APR-JUL	66	98	124	61	153	200	205
	APR-SEP	70	104	131	61	161	210	215
Reynolds Ck at Tollgate	APR-JUL	4.0	5.1	6.0	73	6.9	8.4	8.2
Owyhee R nr Gold Ck (2)	APR-JUL	2.5	4.8	7.0	28	9.8	15.0	25
Owyhee R nr Rome	APR-JUL	12.0	67	128	34	189	280	380
	APR-SEP	14.0	79	140	35	200	290	400
Owyhee R bl Owyhee Dam (2)	APR-JUL	73	115	148	37	186	250	400
	APR-SEP	93	137	172	40	210	275	430
Snake R at King Hill (1,2)	APR-JUL	1940	2600	2900	95	3200	3860	3045
Snake R nr Murphy (1,2)	APR-JUL	2100	2790	3100	100	3410	4100	3090
Snake R at Weiser (1,2)	APR-JUL	5900	5940	5950	103	5970	6000	5770
Snake R at Hells Canyon Dam (1,2)	APR-JUL	5950	6120	6200	96	6270	6440	6490
Snake R bl Lower Granite Dam (1,2)	APR-JUL	17800	21200	22700	105	24300	27700	21550

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Oakley	75.6	41.6	25.7	36.0
Salmon Falls	182.6	99.3	60.1	70.2
WILDHORSE RESERVOIR	71.5	54.9	40.9	46.2
OWYHEE	715.0	624.4	629.0	593.0
Brownlee	1420.0	1002.1	744.8	1029.5

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	4	57	77
Goose-Trapper Creeks	5	65	76
Salmon Falls Creek	8	50	60
Bruneau River	8	35	48
Reynolds Creek	6	82	97
Owyhee Basin Total	19	23	37
Owyhee Basin SNOTEL	8	33	44

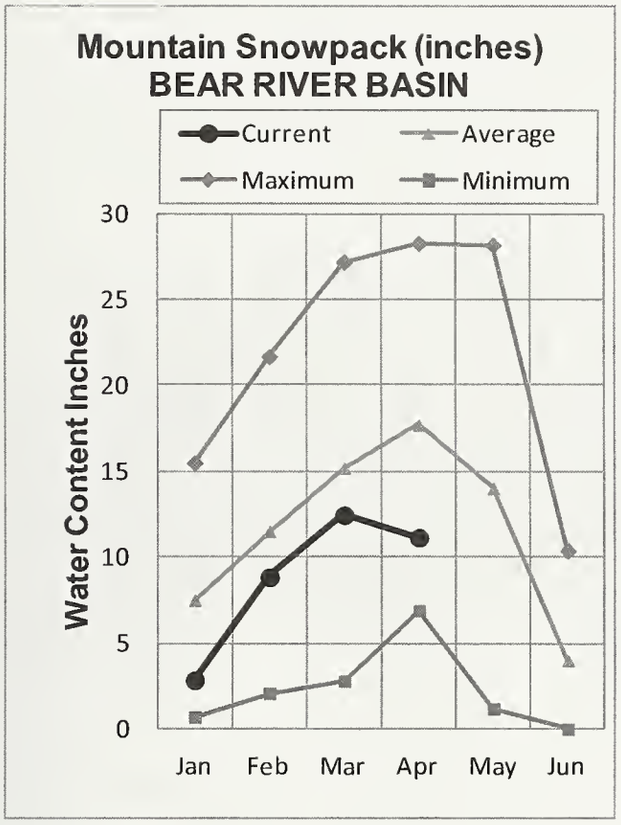
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

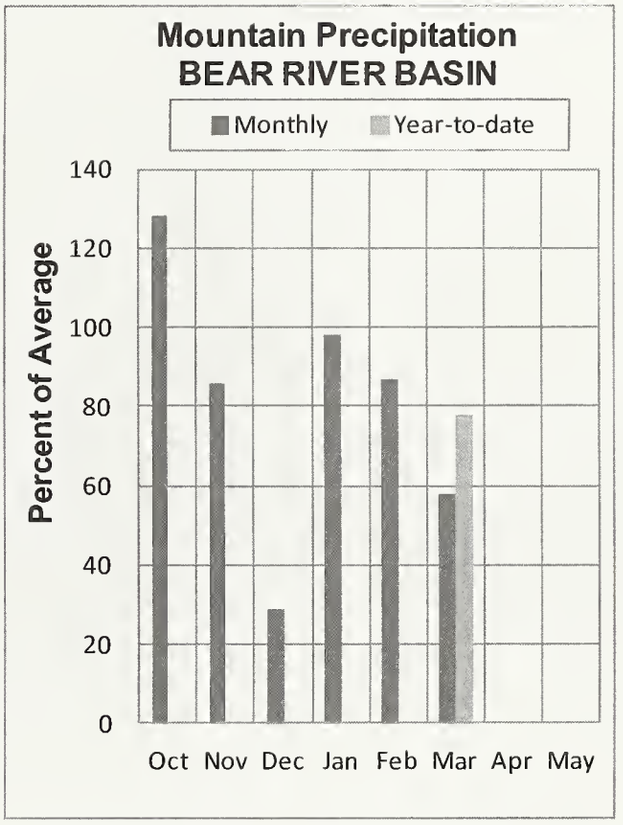
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN

APRIL 1, 2012





WATER SUPPLY OUTLOOK

The Bear Basin sat on the wrong side of the precipitation divide this March. While most of Idaho received near normal to almost three times normal precipitation for the month, the Bear River received 57% making it the driest corner of the state in March. Further complicating matters, warmer than normal temperatures resulted in earlier than normal snowmelt at most SNOTEL sites in the basin. As a result the snowpack dropped from 82% of normal last month to 62% of normal on April 1. Precipitation since the beginning of October stands at 78% of normal, also lowest in the state. Last year winter weather raged until the beginning of May producing one of the best snowpacks on record. By contrast this month's snowpack ranks as one of the worst, similar to 2010 and 2007. Streamflow forecasts are disappointing, with most ranging from about 50-60% of average. The Bear River below Stewart Dam is forecast even lower at 35%. Fortunately for water users, Bear Lake is coming off its greatest ever one year rebound. Currently, April 1 storage in Bear Lake is 1.1 million acre-feet or 125% of average, 81% of capacity. Water users that depend on Bear Lake storage are expected to have an adequate water supply this season, independent of actual streamflow.

BEAR RIVER BASIN
Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear R nr UT-WY State Line	APR-JUL	33	50	62	55	74	91	113
	APR-SEP	36	55	68	54	81	100	125
Bear R ab Res nr Woodruff	APR-JUL	20	45	62	46	79	104	136
	APR-SEP	25	51	68	48	85	111	142
Big Ck nr Randolph	APR-JUL	0.9	2.2	3.0	61	3.8	5.1	4.9
Smiths Fk nr Border	APR-JUL	38	51	60	58	69	82	103
	APR-SEP	47	62	72	60	82	97	121
Bear R bl Stewart Dam	APR-JUL	7.0	25	70	30	115	181	234
	APR-SEP	10.0	42	92	35	142	215	262
Little Bear R at Paradise	APR-JUL	4.0	15.3	23	50	31	42	46
Logan R nr Logan	APR-JUL	37	54	65	52	76	93	126
Blacksmith Fork nr Hyrum	APR-JUL	1.9	13.5	24	50	35	50	48

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Bear Lake	1421.0	1149.6	576.9	923.8
Montpelier Creek	4.0	3.7	2.7	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - April 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	59	78
Bear River ab WY-ID line	4	59	78
Montpelier Creek	2	44	57
Mink Creek	4	42	60
Cub River	2	41	60
Bear River ab ID-UT line	17	48	65
Malad River	1	22	33

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Streamflow Adjustment List for All Forecasts Published in Idaho Water Supply Outlook Report: Streamflow forecasts are projections of runoff volumes that would occur without influences from upstream reservoirs or diversions. These values are referred to as natural, unregulated or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made for each forecast point. **(Revised Dec 2011).**

Panhandle River Basins

Kootenai R at Leonia, MT
+ Lake Koocanusa storage change
Moyie R at Eastport – no corrections
Smith Creek nr Porthill – no corrections
Boundary Ck nr Porthill – no corrections
Clark Fork R at Whitehorse Rapids
+ Hungry Horse storage change
+ Flathead Lake storage change
+ Noxon Rapids Res storage change
Pend Oreille Lake Inflow
+ Pend Oreille R at Newport, WA
+ Hungry Horse storage change
+ Flathead Lake storage change
+ Noxon Rapids storage change
+ Pend Oreille Lake storage change
+ Priest Lake storage change
Priest R nr Priest R
+ Priest Lake storage change
NF Coeur d'Alene R at Enaville - no corrections
St. Joe R at Calder- no corrections
Spokane R nr Post Falls
+ Coeur d'Alene Lake storage change
Spokane R at Long Lake, WA
+ Coeur d'Alene Lake storage change
+ Long Lake, WA storage change

Clearwater River Basin

Selway R nr Lowell - no corrections
Lochsa R nr Lowell - no corrections
Dworshak Res Inflow
+ Clearwater R nr Peck
- Clearwater R at Orofino
+ Dworshak Res storage change
Clearwater R at Orofino - no corrections
Clearwater R at Spalding
+ Dworshak Res storage change

Salmon River Basin

Salmon R at Salmon - no corrections
Lemhi R nr Lemhi – no corrections
MF Salmon R at MF Lodge – no corrections
SF Salmon R nr Krassel Ranger Station – no corrections
Johnson Creek at Yellow pine – no corrections
Salmon R at White Bird - no corrections

Weiser, Payette, Boise River Basins

Weiser R nr Weiser - no corrections
SF Payette R at Lowman - no corrections
Deadwood Res Inflow
+ Deadwood R bl Deadwood Res nr Lowman
+ Deadwood Res storage change
Lake Fork Payette R nr McCall – no corrections
NF Payette R at Cascade
+ Cascade Res storage change
+ Payette Lake storage change
NF Payette R nr Banks
+ Cascade Res storage change
+ Payette Lake storage change
Payette R nr Horseshoe Bend
+ Cascade Res storage change
+ Deadwood Res storage change
+ Payette Lake storage change
Boise R nr Twin Springs - no corrections
SF Boise R at Anderson Ranch Dam
+ Anderson Ranch Res storage change
Mores Ck nr Arrowrock Dam – no corrections
Boise R nr Boise
+ Anderson Ranch Res storage change
+ Arrowrock Res storage change
+ Lucky Peak Res storage change

Wood and Lost River Basins

Big Wood R at Hailey - no corrections
Big Wood R ab Magic Res
+ Big Wood R at Stanton Crossing nr Bellevue
+ Willow Ck
Camas Ck nr Blaine – no corrections
Big Wood R bl Magic Dam nr Richfield
+ Magic Res storage change
Little Wood R ab High Five Ck – no corrections
Little Wood R nr Carey
+ Little Wood Res storage change
Big Lost R at Howell Ranch - no corrections
Big Lost R bl Mackay Res nr Mackay
+ Mackay Res storage change
Little Lost R bl Wet Ck nr Howe - no corrections

Upper Snake River Basin

Henrys Fork nr Ashton
+ Henrys Lake storage change
+ Island Park Res storage change
Falls R nr Ashton
+ Grassy Lake storage change
+ Diversions from Falls R ab nr Ashton
Teton R nr Driggs - no corrections
Teton R nr St. Anthony
- Cross Cut Canal into Teton R
+ Sum of Diversions for Teton R ab St. Anthony
+ Teton Dam for water year 1976 only

Henrys Fork nr Rexburg
+ Henrys Lake storage change
+ Island Park Res storage change
+ Grassy Lake storage change
+ 7 Diversions from Henrys Fk btw Ashton to St. Anthony
+ 21 Diversions from Henrys Fk btw St. Anthony to Rexburg
+ 3 Diversions from Falls R ab Ashton
+ 6 Diversions from Falls R nr Ashton to Chester
Snake R nr Flagg Ranch, WY – no corrections
Snake R nr Moran, WY
+ Jackson Lake storage change
Pacific Ck at Moran, WY - no corrections
Buffalo Fork ab Lava nr Moran, WY - no corrections
Gros Ventre R at Kelly, WY - no corrections
Snake R ab Res nr Alpine, WY
+ Jackson Lake storage change
Greys R nr Alpine, WY - no corrections
Salt R R nr Etna, WY - no corrections
Snake R nr Irwin
+ Jackson Lake storage change
+ Palisades Res storage change
Snake R nr Heise
+ Jackson Lake storage change
+ Palisades Res storage change
Willow Ck nr Ririe
+ Ririe Res storage change
The forecasted natural volume for Willow Creek nr Ririe does not include an adjustment for Grays Lake water diverted from Willow Creek drainage through the Clarks Cut diversion and into Blackfoot Reservoir.
Blackfoot R ab Res nr Henry
+ Blackfoot Res storage change
The forecasted Blackfoot Reservoir Inflow includes Grays Lake water diverted from the Willow Creek drainage through the Clarks Cut diversion and into Blackfoot Reservoir.
Portneuf R at Topaz - no corrections
Snake R at Neeley
+ Jackson Lake storage change
+ Palisades Res storage change
+ American Falls storage change
+ Teton Dam for water year 1976 only

Southside Snake River Basins
Goose Ck nr Oakley - no adjustments
Trapper Ck nr Oakley - no adjustments
Oakley Res Inflow - *flow does not include Birch Creek*
+ Goose Ck
+ Trapper Ck
Salmon Falls Ck nr San Jacinto, NV - no corrections
Bruneau R nr Hot Springs - no corrections
Reynolds Ck at Tollgate - no corrections
Owyhee R nr Gold Ck, NV
+ Wildhorse Res storage change
Owyhee R nr Rome, OR – no Corrections
Owyhee R bl Owyhee Dam, OR
+ Owyhee Res storage change
+ Diversions to North and South Canals

Bear River Basin
Bear R nr UT-WY Stateline, UT- no corrections
Bear R abv Res nr Woodruff, UT- no corrections
Big Ck nr Randolph, UT - no corrections
Smiths Fork nr Border, WY - no corrections
Bear R bl Stewart Dam nr Montpelier
+ Bear R bl Stewart Dam
+ Rainbow Inlet Canal
Little Bear R at Paradise, UT - no corrections
Logan R nr Logan, UT - no corrections
Blacksmith Fk nr Hyrum, UT - no corrections

Reservoir Capacity Definitions (Units in 1,000 Acre-Feet, KAF)
Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS report usable storage, which includes active and inactive storage. **(Revised Dec 2011)**

Basin/ Reservoir	Dead Storage	Inactive Storage	Active Storage	Surcharge Storage	NRCS Capacity	NRCS Capacity Includes
Panhandle Region						
Hungry Horse	39.73	---	3451.00	---	3451.0	Active
Flathead Lake	Unknown	---	1791.00	---	1791.0	Active
Noxon Rapids	Unknown	---	335.00	---	335.0	Active
Pend Oreille	406.20	112.40	1042.70	---	1561.3	Dead + Inactive + Active
Coeur d'Alene	Unknown	13.50	225.00	---	238.5	Inactive + Active
Priest Lake	20.00	28.00	71.30	---	119.3	Dead + Inactive + Active
Clearwater Basin						
Dworshak	Unknown	1452.00	2016.00	---	3468.0	Inactive + Active
Weiser/Boise/Payette Basins						
Mann Creek	1.61	0.24	11.10	---	11.1	Active
Cascade	Unknown	46.70	646.50	---	693.2	Inactive + Active
Deadwood	Unknown	---	161.90	---	161.9	Active
Anderson Ranch	24.90	37.00	413.10	---	450.1	Inactive + Active
Arrowrock	Unknown	---	272.20	---	272.2	Active
Lucky Peak	Unknown	28.80	264.40	13.80	293.2	Inactive + Active
Lake Lowell	7.90	5.80	159.40	---	165.2	Inactive + Active
Wood/Lost Basins						
Magic	Unknown	---	191.50	---	191.5	Active
Little Wood	Unknown	---	30.00	---	30.0	Active
Mackay	0.13	---	44.37	---	44.4	Active
Upper Snake Basin						
Henrys Lake	Unknown	---	90.40	---	90.4	Active
Island Park	0.40	---	127.30	7.90	135.2	Active + Surcharge
Grassy Lake	Unknown	---	15.18	---	15.2	Active
Jackson Lake	Unknown	---	847.00	---	847.0	Active
Palisades	44.10	155.50	1200.00	---	1400.0	Dead + Inactive+Active
Ririe	4.00	6.00	80.54	10.00	80.5	Active
Blackfoot	Unknown	---	348.73	---	348.7	Active
American Falls	Unknown	---	1672.60	---	1672.6	Active
Southside Snake Basins						
Oakley	0.00	---	75.60	---	75.6	Active
Salmon Falls	48.00	5.00	182.65	---	182.6	Active + Inactive
Wildhorse	Unknown	---	71.50	---	71.5	Active
Owyhee	406.83	---	715.00	---	715.0	Active
Brownlee	0.45	444.70	975.30	---	1420.0	Inactive + Active
Bear River Basin						
Bear Lake	5000.00	119.00	1302.00	---	1421.0 includes 119	Active + Inactive: that can be released
Montpelier Creek	0.21	---	3.84	---	4.0	Dead + Active

Interpreting Water Supply Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

90 Percent Chance of Exceedance Forecast. There is a 90 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 10 percent chance that the actual streamflow volume will be less than this forecast value.

70 Percent Chance of Exceedance Forecast. There is a 70 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 30 percent chance that the actual streamflow volume will be less than this forecast value.

50 Percent Chance of Exceedance Forecast. There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

30 Percent Chance of Exceedance Forecast. There is a 30 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 70 percent chance that the actual streamflow volume will be less than this forecast value.

10 Percent Chance of Exceedance Forecast. There is a 10 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 90 percent chance that the actual streamflow volume will be less than this forecast value.

*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin.

30-Year Average. The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1971-2000. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. Users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for.

To Decrease the Chance of Having Less Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of .having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

To Decrease the Chance of Having More Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

Using the forecasts - an Example
Using the 50 Percent Exceedance Forecast. Using the example forecasts shown below, there is a 50% chance that actual streamflow volume at the Boise River near Twin Springs will be less than 685 KAF between April 1 and July 31. There is also a 50% chance that actual streamflow volume will be greater than 685 KAF.

Using the 90 and 70 Percent Exceedance Forecasts. If an unexpected shortage of water could cause problems (such as irrigated agriculture), users might want to plan on receiving 610 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 610 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 443 KAF (from the **90** percent exceedance forecast). There is 10% chance of receiving less than 443 KAF.

Using the 30 or 10 Percent Exceedance Forecasts. If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 760 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 760 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 927 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 927 KAF.

Users could also choose a volume in between any of these values to reflect their desired risk level.

Weiser, Payette, Boise River Basins
Streamflow Forecasts – January 2006

Forecast Point	Forecast Period	Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000 AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	690

*90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table

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